

Scuba Tank Mounting Brackets.

Abstract

Quick change mounting plates provided for mounting a single scuba tank to the back of a BCD (buoyancy compensating device) for scuba diving. One plate is attached to the BCD and the other plate is attached to the scuba tank. The plate attached to the BCD is secured by means of two screws, two washers, and an inset female anchor for the screws. The plate mounted to the scuba tank is secured with two scuba tank straps. After the two plates are secured to their designated items, the two plates are attached by sliding in a vertical fashion from top to bottom the "dove tail" extension located on the scuba tank plate into the female "dove tail" groove designed into the plate located on the BCD. The two plates are further secured together by means of a Detent pin at the top of the two plates, which further secures the two plates together. The two plates are secured to their respective items by means of screws, washers, threaded inset, and scuba tank bands.

Claims

Two mounting plates for the purpose of quickly mounting a divers scuba tank to the BCD with one plate attached to the back of a the BCD and the other plate attached to the scuba tank. The quick change plates would also simplify the setting up the scuba tank for mounting to the BCD, exchanging tanks between dives, and putting on the BCD more securely and with less effort. The plates would remain attached to their respective items when they are not connected together. Once they are attached to the BCD and the scuba tank, they would remain attached for quick mounting and dismounting when preparing to scuba dive.

1. Two plates, one being flat with a horizontal "dove tail" slot in the center with the slot opening at the top of the plate and with the slot having a stopping point near the bottom of the plate to secure a second attached plate in a fixed position. The second plate is connected to the first plate by means of a male "dove tail" extension which is slid in a vertical fashion down inside the "dove tail" slot in the first plate. The second plate, in addition to having the "dove tail" extension has one the other opposite facing side a curved or half moon shaped surface.
2. The first mounting bracket is secured to the BCD by screws, washers, and threaded inserts through two counter sunk holes one in he plate one located near the top and one located near the bottom of the plate in the center of the slot.

3. The second plate attached to the divers scuba tank is attached by means of two standard scuba tank bands the type that are typically provided with a divers BCD. The bands are two inches wide and fit into
4. the two slots fashioned into the second plate one near the top and one near the bottom of the plate. The curved side of the plate attaches against the scuba tank and the other attaches to the first plate attached to the BCD.
5. There will be a Detent pin placed through both plates near the top slid through a hole in a horizontal position to further secure the two plates together preventing them from separating when the diver is in a head down vertical position in the water.

Description

Field Of The Invention

This invention relates to a mounting plate for a BCD (buoyancy compensating device) and for a single scuba diving tank for the purpose of a quicker mounting of the scuba tank to the BCD. This will allow the diver to put on the BCD more securely with much less effort, more securely attach and detach the scuba tank to the BCD with less effort, and more quickly exchange scuba tanks for the next dive. When not diving, the diver would leave the mounting plates attached to their respective items.

Background Of The Invention

Scuba tanks are typically mounted to a BCD by means of two mounting straps that are attached to the BCD. This requires picking up the BCD and slipping the straps attached to the BCD over the top of the scuba tank. The scuba tank is then positioned to the BCD to correct height. While attempting to secure the BCD in it's correct position, the diver tightens one scuba strap to the scuba tank and then the other. If additional diving devices are need to be attached to the scuba tank bands such as a diving light or pony tank bracket the diver must also deal with this while keeping the BCD in its proper position until the scuba tank is securely attached to the BCD. Once the BCD and tank are secured together the diver attaches the regulators to the scuba tank and diving weights to the BCD (if the BCD is weight integrated). After this the diver must strap the BCD vest on, stand in a hunched vertical position, and tighten the BCD securely for diving. Sometimes it is needful for the diver to readjust the BCD and scuba tank straps once in the water for a more secure fit.

Summary Of The Invention

The invention will allow the scuba diver to more securely and easily put on the BCD prior to attaching the scuba tank to the BCD. This eliminates approximately 40 lbs. of additional weight the diver must lift while attempting to stand and secure the BCD with weights, regulators, and scuba tank attached to the BCD. This will eliminate attempting to secure the scuba tank and other needed scuba gear to the BCD in their proper position. The scuba tank regulators and air hoses will be more easily attached and detached to the scuba tank when not attached to the BCD.

Brief Description Of The Drawings

1. Fig. 1 illustrates from a top view the two plates attached together but by means of the “dove tail” male extension and female slot and the securing Detent pin.
2. Fig. 1a illustrates the plate that mounts to the scuba tank.
3. Fig. 1b illustrates the plate that mounts to the BCD.
4. Fig. 1c illustrates the scuba tank.
5. Fig. 1e illustrates the Detent pin with the standard ring attached at the insert side of the hole and the other end that shows the ball bearing end of the pin. The spring-loaded ball bearing keeps the pin from sliding out.
6. Fig. 2 illustrates from a top view the plate that mounts to the scuba tank.
7. Fig. 2a illustrates a full-face view of the curved side of the plate that mounts to the scuba tank.
8. Fig. 2b illustrates a full-face view of the plate which attaches to the scuba tank from showing the “dove tail” side of the plate. The “dove tail” extension slides from the top of the plate which mounts to the BCD in a downward vertical manner.
9. Fig. 2c illustrates a side view of the plate that attaches to the scuba tank and the plate that mounts to the BCD.
10. Fig. 2e & 2f illustrate the two recessed points at which the scuba tank straps secure the plate to the scuba tank.
11. Fig. 3 illustrates the plate which mounts to the BCD showing the slotted “dove tail” groove that opens at the top extending down the middle near the bottom where it stops. The plate which attaches to the scuba tank fig. 2 is attached to this plate by means of the extended male “dove tail” fig. 2b, which slides down this slot securing the two plates together Fig. 1 and further secured with the Detent pin fig. 1e.
12. Fig. 3b & 3c show the two counter sunk holes drilled through the plate used to secure the plate to the BCD with the 2 screws, 2 washers, and 2 threaded inserts for the screws to attach the BCD and plate.